

XRD Accessories

Digital X-ray Flat Panel Detector Power Supplies, Frame Grabbers, and Cables

PerkinElmer Digital X-ray Flat Panel Detectors (FPDs) require additional power supplies, frame grabbers and cables for optimum performance. Below you will find detailed descriptions of the accessories and charts that will explain which power supplies, frame grabbers and cables are compatible with each detector.



Power Supplies

The XRD power supplies are stand-alone units designed to support PerkinElmer's FPDs. They support 100 V to 240 V at 50 Hz and 60 Hz. An LED display indicates the status of the device. The XRD EPS Power Supply is distinguished by its rugged design, versatility, and low ripple and humming voltage. The output voltages are stabilized across the load using voltage-sensing connections.

Power Supply	XRD EPS (XRD 0822, 1622, 1621)	XRD LPM (XRD 1622)
Electrical		
Input	100 – 240 V AC, 50/60 Hz, 2.9 – 1.1 A max, 215 W	100 – 240 V AC, 50/60 Hz, max 0.9 A, 40 W
Output	5.4 V / 5 A DC, 12.5 V / 10 A DC, -12.5 / 5 A DC	13.7 V DC / 3 A
Status light	Power-On, Overload	Power-on
Cables	AC (international), Detector power (various)	1.8 m long AC cable with an IEC 60320 C14 connector
Mechanical		
Size	25 cm (l) x 8.3 cm (w) x 12.7 cm (h)	13.5 cm (l) x 8.0 cm (w) x 4.4 cm (h)
Weight	3.1 kg	0.9 kg
Housing	Aluminum	Plastic
Environmental		
Temperature	0 – 70°C (operating), -10 – 70°C (transport)	0 – 40°C (operating / Derating 60°C), -25 – 85°C (transport)
Humidity	5 – 90% RH (non-condensing)	5 – 90% RH (non-condensing)
Ingress	IP-67 rated	IP-67 rated, indoor-use only
Vibration	Meets IEC 60068-6 (10 – 150 Hz, 0.5 g)	n/a
Shock	Meets IEC 60068-27 (11 ms, 2 g)	n/a
Regulatory		
Standards	UL-60601-1, EN-60601-1, IEC-60950, EN-60950	UL-60601-1, EN-60601-1, IEC-60950, EN-60950
Regulations	CE, RoHS, WEEE	CE, RoHS, WEEE

Note: PerkinElmer Digital X-ray Flat Panel Detectors and accessories are designed as components to be integrated into a complete X-ray system by imaging systems manufacturers. Manufacturers are responsible for qualifying, validating, certifying their intended use in their specific applications and meeting all applicable regulatory requirements established by country and local government authorities.

Contents in this document are subject to change without notice.



Frame Grabbers (For use with XRD 1621 only.)

The XRD Frame Grabber boards are used for controlling and acquiring 16-bit data images using PerkinElmer Digital X-ray Flat Panel Detectors (FPD). They connect to the FPDs with an optical fiber interface. Up to four frame grabbers, each using its own detector, can be connected to one PC. Frame Grabbers provide the advantage of synchronization between the detector and X-ray source or manipulator by using an external trigger signal or by using the internal trigger function of the frame grabber. It provides an FPGA and 256 MB RAM to perform on-board corrections including multiple gain correction at 10 signal levels. The robust optical fiber interface provides galvanic isolation between the FPD and frame grabber and IP68 proofed plugs on the side of the detector and on both ends of the extension cable.

Frame Grabber	XRD FGX Opto	XRD FGe Opto
Hardware		
PCI interface	PCI-X 2.0	PCI express (PCIe) x4
Data rate	1000 MB/s	2000 MB/s
Memory	256 MB	256 MB
Dimensions	195 mm x 107 mm	195 mm x 107 mm
Software		
Imaging Library	XISL	XISL
Operating System	Windows OS 32 bit (2000, XP)	Windows OS 32 bit (XP, Vista, Win7) Windows OS 64 bit (Vista, Win 7)
Processing		
Image Corrections (software)	n/a	n/a
Image Corrections (hardware)	Offset, multiple gain, and pixel	Offset, multiple gain, and pixel
Interface		
Trigger	LVDS	LVDS
Data	Optical (up to 400ft / 100 m) cables	Optical (up to 400 ft / 100 m) cables
Environmental		
Temperature	+0° to +40°C (2 m/s forced air cooling)	+0° to +40°C (2 m/s forced air cooling)
Humidity	5% to 85%	5% to 85%
Regulatory		
Standards	EN-60601-1	EN-60601-1
Regulations	CE, RoHS, WEEE	CE, RoHS, WEEE

Cables

Several options of power, trigger, and data cables are available. It is possible to extend maximum cable length using extension and connectors.



	XRD 1621	XRD 0822	XRD 1622
Data Cable			
25 ft (7.6 m)	Optical fiber	Cat6e	Cat6e
25 ft (7.6 m)	Optical fiber (extension cable)		
50 ft (15.25 m)		Cat6e	Cat6e
100 ft (30.5 m)	Optical fiber (extension cable)	Cat6e	Cat6e
200 ft (61 m)		Cat6e	Cat6e
300 ft (91.5 m)	Optical fiber (extension cable)		
Trigger Cable			
16.5 ft (5 m)		TTL	TTL
25 ft (7.6 m)	LVDS		
50 ft (15.25 m)	LVDS		
65.5 ft (20 m)		TTL	TTL
100 ft (30.5 m)	LVDS		
300 ft (91.5 m)	LVDS	with LVDS Converter	with LVDS Converter
Signal Converters			
TTL to LVDS Converter	✓	✓	✓
LVDS to TTL Converter		✓	✓
DC-Power Cable			
25 ft (7.6 m)	✓	✓	with XRD EPS
50 ft (15.25 m)	✓	✓	with XRD EPS
100 ft (30.5 m)	✓	✓	with XRD EPS

Shielding

It is important to protect the electronics of the FPDs with shielding cassettes to ensure they are not damaged during use. We offer several shielding options for our XRD 0822 and XRD 1622 FPDs at 160, 225, 350 and 450 keV. Tungsten shielding is one available option; it has less scattering effects than lead, improves image quality, and is easier for service engineers to handle and install.

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